

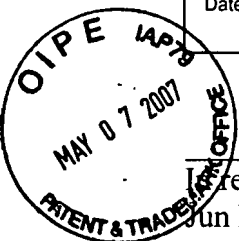
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Dated: May 1, 2007

Signature: \_\_\_\_\_

(Mehran Arjomand)

Docket No.: 393032040000  
(PATENT)



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Re Patent Application of:  
Jun ISHII et al.

Application No.: 10/642,542

Confirmation No.: 1959

Filed: August 14, 2003

Art Unit: 2837

For: SYNCHRONOUS PLAYBACK SYSTEM FOR  
REPRODUCING MUSIC IN GOOD  
ENSEMBLE AND RECORDER AND PLAYER  
FOR THE ENSEMBLE

Examiner: J. Qin

**APPEAL BRIEF**

MS Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

As required under 37 C.F.R. § 41.37(a) and (e), this brief is filed after the Notice of Appeal filed on November 1, 2006 and is in furtherance of the Notice of Appeal.

The fees required under § 41.20(b)(2), and the required petition for extension of time for filing this brief and accompanying fees, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF and PETITION FOR EXTENSION OF TIME.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

- |      |                                   |
|------|-----------------------------------|
| I.   | Real Party in Interest            |
| II   | Related Appeals and Interferences |
| III. | Status of Claims                  |
| IV.  | Status of Amendments              |

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V.	Summary of Claimed Subject Matter
VI.	Grounds of Rejection to be Reviewed on Appeal
VII.	Argument
VIII.	Claims Appendix
IX.	Evidence Appendix
X.	Related Proceedings Appendix
Appendix A	Claims

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Yamaha Corporation, the current assignee of the present application.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 33 claims pending in the present application.



B. Current Status of Claims

1. Claims canceled: none
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 1-33
4. Claims allowed: 16-33
5. Claims rejected: 1, 4, 11, 12, 15
6. Claims objected to but indicated as allowable if rewritten as to remove dependence upon rejected claims: 2, 3, 5-10, 13 and 14.

C. Claims On Appeal

The claims on appeal are claims 1, 4, 11, 12 and 15.

IV. STATUS OF AMENDMENTS

Applicants filed a Response to a Final Office Action on September 5, 2006. The September 5, 2006 response did not include any amendments to the claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention as set forth in independent claim 1 is directed to a recorder. The recorder can record music data of a first type in ensemble with playback of music data of a second type. For example, a user may record MIDI data of a performance on a piano in ensemble with audio data of a song from a CD. (See, e.g., specification at page 25, line to page 26, line 3 and Fig. 1 showing a controller 6 receiving data from a piano 3 and a compact disc driver 1.)

What separates the present invention from a conventional recorder is the capability of providing synchronous playback of the MIDI performance with the audio data of the CD even when a *different* CD from the CD of the initial recording is used. This is important, because differences



often exist between CDs that purport to include the same song. The differences may be the result of differences in expression between artists performing the same song. Or even if the CDs are by the same artist, producers may slightly tweak the timing of various tracks during different production runs. Thus, two CDs having the same Luis Armstrong song may nevertheless feature slightly different timings. If the user records his MIDI musical performance with a song from one version of an Armstrong CD but then tries to playback his MIDI musical performance with the same song from another version of an Armstrong CD, the playback may not be synchronous.

In contrast, the recorder of claim 1 ensures a synchronous playback. It does so by recording three categories of data during the initial recording. (*See, e.g.*, specification at page 25, line 1 to page 26, line 3.) First, the recorder stores music data of a first type from a first source, *e.g.*, the MIDI data from a musical performance by a user. Second, the recorder receives music data of a second type from a second source (*e.g.*, audio data from a CD) and extracts and saves “reference characteristic data” from the music data of the second source. The reference characteristic data reflects a particular feature, for example, of a music passage such as a sudden change in volume. Such features appear in any performance of the music passage regardless of the artist and thus can be used to correlate different versions of the same music piece. Third, the recorder records time data. The time data provides an absolute scale for correlation.

Thus, the recorder of claim 1 records three categories of data together to ensure synchronous playback: the music data of a first type from a first source, the reference characteristic data relating to the music data of a second type from a second source and time data. The reference characteristic data and the time data provide the necessary “signposts” to ensure a synchronous playback of the ensemble even when the music data of the second type is provided from another source different than the second source used in the initial recording.

Claim 1 recites a recorder comprising “an interface connected to a data source of said pieces of said first sort of music data” and “another data source of said pieces of said second sort of music data.”



The recorder further comprises a data processing unit connected to the interface. The processing unit “extracts pieces of reference characteristic data representative of particular features of an audio waveform expressing said music passage from said pieces of said second sort of music data for synchronization between said performance and another music passage produced in another playback.” The processing unit forms a music data file of “said pieces of said first sort of music data, said pieces of reference characteristic data and pieces of time data representative of timing to reproduce tones produced in said performance . . . .”

#### VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner rejected claims 1, 4, 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Neuman (U.S. Pub. No. 2003/0103076) in view of Murakami (U.S. Pat. No. 4,594,930). Claim 15 was rejected under § 103(a) as being unpatentable over Neuman in view of Murakami and Hagiwara et al. (U.S. Pat. No. 6,750,389 B2).

#### VII. ARGUMENT

##### A. Claim 1 is patentable over Neuman and Murakami.

Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness with respect to claim 1. (*See* M.P.E.P 2143.) As discussed in further detail below, Neuman and Murakami fail to teach or suggest “a data processing unit . . . forming said pieces of said first sort of music data, said pieces of reference characteristic data and pieces of time data representative of timing to reproduce tones produced in said performance into said music data file” as recited in claim 1.

Neuman is directed to a system for modifying a first input signal based on a second input signal. The detailed embodiment describes the first input signal as a video signal and the second input signal as an audio signal. (*See, e.g.*, paragraph 0032 and Fig. 2.) The input audio signal is sampled for a characteristic, such as any sounds that exceed a pre-set decibel threshold. (*Id.*) The



input video signal is then modified in accordance with the sampled data to produce an output signal that can be played back with the input audio signal.

Fig. 2 of Neuman illustrates an example. An input video signal (Signal 1) of a walking person is modified with respect to an input audio signal (Signal 2) to produce an output video signal (Signal 3). Specifically, when the volume of the audio signal increases beyond a threshold (*e.g.*, at reference number 26) the order of the frames of the input video signal is changed (*compare* reference number 13 to reference number 46) to produce an output video signal so that the walking person of the output video signal seems to move according to beats of the input audio signal as it plays.

There is no disclosure in Neuman of a recorder having a data processing unit that stores three categories of data into a file to ensure a synchronous playback, *i.e.*, “a data processing unit . . . forming said pieces of said first sort of music data, said pieces of reference characteristic data and pieces of time data representative of timing to reproduce tones produced in said performance into said music data file” as recited in claim 1.

Neuman discloses using a “derivative file” to store the time and amount that the input audio signal exceeds a pre-set threshold. (*See* Paragraph 0030.) It appears that the Examiner considers this data as meeting the recited “reference characteristic data” of claim 1. Even if assuming *arguendo* that this is correct, Neuman does not disclose a data processing unit that forms a music data file with such data *and* “said pieces of said first sort of music data” of a performance or “time data.” On the contrary, Neuman describes the “derivative file” as storing only data relating to a characteristic of the input audio signal and does not describe the file as storing other data, such as data corresponding to another input signal. (*Id.*, at paragraphs 0030-31; *see also* paragraph 0049.)

Nor is there any reason for or suggestion in Neuman to form a file with the recited three categories of data. The recorder of the present invention stores music data of a first type from a first source (*e.g.*, MIDI data from a musical performance), reference characteristic data extracted from music data of a second type from a second source (*e.g.*, audio data from a CD) and time data to



ensure synchronous playback if the music data of the first type from the first source is played back with music data of the second type from a source different than the initial second source (*e.g.*, audio data from a different version of the same CD). In contrast, Neuman is not at all concerned with synchronously playing back an input signal with another input signal that varies from source to source. Neuman is instead concerned with modifying an input signal (*e.g.*, an input video signal) based on a changing characteristic of another input signal (*e.g.*, an input audio signal). The task can be achieved by storing those changes in a “derivative file” without the need to store additional data therein.

Murakami does not make up for the deficiencies of Neuman. From the Examiner’s comments in the Advisory Action dated September 25, 2006, the Examiner apparently cited Murakami to support Neuman’s disclosure relating to the reference characteristic data as being “representative of particular features of an audio waveform expressing said music passage.” In any event, Murakami fails to teach or suggest a recorder having “a data processing unit . . . forming said pieces of said first sort of music data, said pieces of reference characteristic data and pieces of time data representative of timing to reproduce tones produced in said performance into said music data file” as recited in claim 1.

Murakami discloses a system that receives audio signals from a plurality of sources such as 200a and 200b illustrated in Fig. 1. The system synchronizes the two or more audio signals in order to match the beats of the signals. The Examiner apparently considered these “beat signals” as meeting the recited “reference characteristic data.” Even assuming *arguendo* that the beat signals are reference characteristic data, Murakami does not disclose saving these beat signals at all. Instead the beat signals are used to modify the frequency of one of the audio signals in real time and then are presumably discarded. (*See* Col. 2, line 44 through Col. 3, line 5.) Because Murakami does not disclose saving the beat signals, it also does not disclose saving “reference characteristic data” in a file with the music data of a first type and timing data as further recited in claim 1.

Accordingly, for at least the above discussed reasons, claim 1 is patentable in view of Neuman and Murakami.



B. Claims 4, 11, and 12 are patentable in view of Neuman and Murakami.

Claims 4, 11 and 12 depend from claim 1. Each are patentable for at least the reasons discussed above with respect to claim 1. Claim 4 recites that the music data of the first type is defined by the MIDI standard and the music data of the second type is defined by the Red Book for compact discs. The Examiner cited to paragraph 0048 of Neuman as disclosing the recitation of claim 4. While paragraph 0048 discloses different types of audio formats, there is no disclosure in that paragraph of a system receiving two audio signals of the recited different types in claim 4.

C. Claim 15 is patentable in view of Neuman, Murakami and Hagiwara.

Claim 15 depends upon claim 1. Claim 15 defines in part that the data source of the music data of the first type is an automatic player piano and that the data source of the music data of the second type is a compact disc driver. In the Final Office Action, the Examiner conceded that Neuman and Murakami do not disclose an automatic player piano as a data source and a CD driver as another data source.

Hagiwara discloses a system in which stored music data is accessed to drive an automatic player piano as well as a tone generator to provide an ensemble performance. The stored data can be MIDI data and audio data. (*See, e.g.*, Col. 5, line 41 to Col. 6, line 16; Col. 14, lines 10-28; Figs. 1, 2 and 18.) However, Hagiwara fails to disclose or suggest forming a file with music data of a first type from a first source, "reference characteristic data" extracted from music data of a second type from a second source and time data. Hagiwara in short fails to make up for the deficiencies of Neuman and Murakami. Accordingly, claim 15 is patentable in view of Neuman, Murakami and Hagiwara.

## VIII. CLAIMS APPENDIX

A copy of the claims involved in the present appeal, *i.e.*, claims 1, 4, 11, 12 and 15, is attached hereto as Appendix A.



IX. EVIDENCE APPENDIX

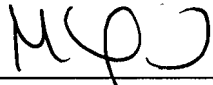
No evidence pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.

X. RELATED PROCEEDINGS APPENDIX

Because no related proceedings are referenced in II. above, or copies of decisions in related proceedings are provided, no Related Proceedings Appendix is included.

Dated: May 1, 2007

Respectfully submitted,

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**APPENDIX A****Claims Involved in the Appeal of Application Serial No. 10/642,542**

Claim 1 (previously presented): A recorder for recording a performance represented by pieces of first sort of music data in ensemble with a playback of a music passage represented by pieces of second sort of music data different in format from said first sort of music data, comprising:

- an interface connected to
  - a data source of said pieces of said first sort of music data,
  - another data source of said pieces of said second sort of music data and
  - a destination to which a music data file is supplied; and
- a data processing unit connected to said interface, extracting pieces of reference characteristic data representative of particular features of an audio waveform expressing said music passage from said pieces of said second sort of music data for synchronization between said performance and another music passage produced in another playback, and forming said pieces of said first sort of music data, said pieces of reference characteristic data and pieces of time data representative of timing to reproduce tones produced in said performance into said music data file for supplying said music data file through said interface to said destination.

Claim 4 (original): The recorder as set forth in claim 1, in which the format for said piece of said first sort of music data is defined in MIDI (Musical Instrument Digital Interface), and the format for said pieces of said second sort of music data is defined in Red Book for compact discs.



Claim 11 (original): The recorder as set forth in claim 1, in which said data processing unit extracts abrupt changes of an attribute of sound from said pieces of said second sort of music data as said pieces of said reference characteristic data, and said abrupt changes are stored in said music data file together with other pieces of said time data representative of timing at which said abrupt changes take place.

Claim 12 (previously presented): The recorder as set forth in claim 11, in which said abrupt changes are extracted from the entire music passage so that said another music passage is made consistent with said music passage by making said abrupt changes correspond to abrupt changes extracted from pieces of said second sort of music data representative of said another music passage.

Claim 15 (original): The recorder as set forth in claim 1, in which an automatic player piano serves as said data source so that said pieces of said first sort of music data are supplied to said interface while a user is fingering on said automatic player piano, and a compact disc loaded into a compact disc driver serves as said another data source so that said piece of said second sort of data are transferred from said compact disc to said interface while said user is fingering on said automatic player piano.